

**EXPLOSIVES SAFETY SUBMISSION (ESS)
ORDNANCE AND EXPLOSIVES (OE) REMOVAL ACTION
CASTNER RANGE
FORT BLISS, TEXAS**

Prepared for

**U. S. Army Corps of Engineers
Huntsville Center**

**Contract No: DACA87-87-00-D-0036
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Project No: K06TXCAST06SWF**

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Attachment 1: Regional Maps

Attachment 2: Quantity Distance (QD) Maps

EXPLOSIVES SAFETY SUBMISSION

1.0 INTRODUCTION

This Explosive Safety Submission (ESS) has been prepared for a Removal Action (RA) within selected areas of Castner Range, Fort Bliss Texas. The purpose of this Removal Action is to detect, identify, and remove ordnance and explosives (OE) in approximately 1,291 acres in five initial separate locations (see Table 1-1) within the Castner Range to the depth detected. Depending on the items located during the surface search the subsurface acreage will vary within the areas. The RA is being conducted under Scope of Work (SOW), Ordnance and Explosives (OE) Removal Action, Castner Range, Fort Bliss Texas, Revised 28 August 2002, Contract DACA87-00-D-0036, Delivery Order 0014. USA Environmental, Inc. (USA), under the delivery order, submitted a draft work plan for review and approval.

TABLE 1-1: INITIAL REMOVAL AREAS

AREA	ACRES
1. North Hills	253
2. Hondo Pass	337
3. Museum & Poppy Area	327
4. City Of El Paso Access	148
5. Fusselman Canyon	226
6. *TBD	481
Totals	1772

* An amendment to the ESS will be submitted for approval upon selection of the Area 6 RA location and prior to starting operations. The amendment will include the applicable most probable munition, minimum separation distance, associated maps, and Quantity Distance drawings.

The work required under this Scope of Work (SOW) falls under the Defense Environmental Restoration Program (DERP) - Installation Restoration Program (IRP). Ordnance and Explosives (OE) contamination may exist on property presently owned by the Department of the Army. OE is a safety hazard and may constitute an imminent and substantial endangerment to the local populace and site personnel. During removal action, it is the Government's intent that the OE contractor shall destroy all OE encountered, on-site. This action will be performed in accordance with (IAW) the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, Section 104) and the National Contingency Plan (NCP) (Sections 300.120(d) and 300.400(e)(1)). The provisions of 29 CFR 1910.120 shall apply for this site.

1.1 REASON FOR OE

Castner Range was originally established in 1926 and included approximately 3,473 acres. A Deed of Cession was obtained from the State of Texas in October 1928 enlarging the Castner Range Area. Subsequently, an additional 4,800 acres were acquired by purchase in 1939. From the time Castner Range was established until its closure in 1966, the Range was used as an ordnance impact area for a number of different weapon types.

1.2 AMOUNT AND TYPE OF OE

Previous investigations and studies throughout Castner Range have identified numerous surface and some subsurface ordnance items ranging from hand/rifle grenades, rockets, and 37 mm to 105 mm

projectiles. Based on the previous investigations it is anticipated that OE items may be encountered in each of the five initial areas of interest (AOI).

1.2.1 MOST PROBABLE MUNITION

The most probable munition (MPM), based on items encountered during previous investigations within each of the AOIs, is shown in Table 1-2. If during the course of the investigation, OE with a greater fragment range than the MPM is encountered, the minimum separation distances (MSD) in DOD 6055.9 STD, Chapter 5, paragraph C5.5.4 will be used. The MSD for the MPM will be recalculated by USAESCH, the quantity-distance (Q-D) arc will be adjusted, and an amendment to the ESS will be submitted for approval.

TABLE 1-2: MOST PROBABLE MUNITION

Area	***MPM	*Unintentional Detonation			**Intentional Detonation	
		Max. Frag. Range (ft.)	Range to No More than 1 Hazardous Fragment per 600 sq. ft. (ft.)	K50 Range to 0.9 psi Overpressure (ft.)	Maximum Fragment Range (ft.)	K328 Overpressure Range (ft.)
1	40 mm M406	345	N/A	23	345	153
2	37mm MK II	980	200	20	980	131
3	75 mm HE M48	1701	234	60	1701	396
4	75 mm HE M48	1701	234	60	1701	396
5	75 mm HE M48	1701	234	60	1701	396
6	TBD					

Notes:
 * Team separation distance for unintentional detonations is the K50, or 200 feet minimum whichever is greater. Maximum fragmentation distance for other personnel.
 ** MSD for intentional detonations is maximum fragment range of the MPM for the OE area.
 *** MPM based on previous investigations by UXB, CMS, and EHSI.

1.3 START DATE

Phase 1 mobilization for site setup, hiring of local personnel and site training is scheduled for January 12, 2003. Surface and subsurface removal is scheduled to begin on February 3, 2003.

1.4 FROST LINE

Not applicable. The El Paso, Fort Bliss area is a semi-arid subtropical climate with light precipitation and an average depth of frost penetration of 2-inches. All identified surface and subsurface anomalies/targets will be cleared to detection depth.

1.5 CLEARANCE TECHNIQUES

USA will perform an OE Removal Action at the Castner Range sites. The removal action will include subsurface investigations to depth. Teams consisting of a UXO Technician III (Team Leader) and local hire, trained UXO Sweep personnel will perform a magnetometer search of the 60 x 60 meter grids. The sweep teams will mark surface UXO and subsurface anomalies for investigation and disposal by the Investigation Teams. Grids will be searched in approximate 1.5-meter lanes and cleared to depth. The anomalies will be excavated, identified, recorded and either destroyed by detonation in place or moved to

a consolidation point within the grid by the follow-on Investigation Teams. Scrap will be segregated and placed in temporary stockpiles and secured in a container at the work trailer site at the end of the workday. Excavations will be backfilled. In accordance with the Fort Bliss Environmental Office, demolition shot holes will be left open to weather and recover naturally to preclude additional collateral damage in attempting to backfill. The following sub-paragraphs describe the equipment and procedures the individual UXO Teams will use to search the individual grids and to mark UXO and subsurface anomalies.

1.5.1 CAPABILITIES AND LIMITATIONS

Based on the terrain and vegetation USA will use hand-held ferrous magnetometers and/or non-ferrous metal detectors for the detection of OE items. Both the Schonstedt GA-52CX and the White Eagle Spectrum have the capabilities of detecting the MPM within each of the AOIs. Some locations within the areas may contain metal ore-bearing rocks and teams will use whichever instrument provides the most accurate response. The terrain is mostly rocky with little topsoil except in arroyos where topsoil may be deeper due to erosion. Due to the limited amount of topsoil the magnetometers will be able to detect OE/UXO to its maximum penetration depths.

The SOW prohibits any vegetation clearance for the sites and some areas have arroyos and/or thick underbrush that would preclude the use of towed instruments. The OE surveys within these arroyos and underbrush will require inserting the magnetometers in, around, and under the vegetation to detect the surface and subsurface anomalies. During the OE survey USA will record these areas within grids, using Global Positioning System (GPS), where the efficiency of OE surveys were impacted by terrain and/or vegetation.

1.5.2 SEARCH LANES

Each grid will be sub-divided into individual search lanes. Individual search lanes will consist of approximately 1.5-meter wide parallel paths that run parallel to one boundary of the operating grid. Most of the vegetation consists of waist-high scrub brush that will accommodate the 1.5-meter search lanes. In heavily vegetated areas and arroyos the search lanes will be adjusted consistent with access and area coverage. Search lanes will run adjacent to each other and completely cover the entire operating grid.

1.5.3 MAGNETOMETER SEARCH

After the individual search lanes have been established personnel will begin searching each lane with a magnetometer. UXO Sweep personnel will start at one end of each lane and will move forward toward the opposing base line. During the forward movement the individual will move the magnetometer from one side of the lane to the other. Both forward movement and the swing of the magnetometer will be performed at a pace that ensures that the entire lane is searched and that the instrument is able to appropriately respond to subsurface anomalies.

Whenever a subsurface anomaly or metallic surface object is encountered the individual will halt and install the appropriately colored flag at that location. Throughout this operation, the UXO Team Leader will closely monitor individual performance to ensure that these procedures are being performed with due diligence and attention to detail. Surface UXO encountered will be marked, reported to the SUXOS, and left in place for the Investigation Team for final identification and disposal.

1.5.4 SUBSURFACE REMOVAL PROCEDURES

Teams consisting of all UXO qualified personnel will perform subsurface investigations of marked anomalies. Once sufficient grids have been completed to warrant the start of anomaly investigations and

maintain team separation distances (see Table 1-2), the UXO Technicians will begin excavating and investigating the subsurface anomalies. During this operation, the UXO Team Leader will disperse the UXO Technicians across the operating grid in a manner that maximizes the separation distance between individual technicians. Excavation of anomalies will be performed in accordance with the procedures outlined in the following subparagraphs.

1.5.4.1 Equipment

The equipment requirements for this activity include:

- Schonstedt GA-52CX magnetometer and/or White Eagle Spectrum metal detector, which will be used to detect subsurface metallic anomalies and/or UXO. If encountering ore-bearing rocks the Team will use whichever magnetometer provides to most accurate response to the target(s);
- Hand digging tools such as shovels and hand trowels.

1.5.5 ENGINEERING CONTROLS

In some areas, it may be necessary to use a Miniature Open Front Barricade (MOFB) as engineering controls depending on the MPM and required MSD to protect non-essential personnel and property. The following paragraphs outline the use, maintenance, and precautions for their use.

1.5.5.1 Use of Barricades

The use of the MOFB will be in accordance with HNC-ED-CS-S-98-8, dated November 1998. USA personnel who employ the barricades will be trained in their proper use. The barricades will be used to investigate suspected ordnance items in areas where the observation of the Established Exclusion Zone (EZ) is not possible.

- Install all plates prior to investigating and/or excavating the anomaly;
- The barricade will be placed with the anomaly located a minimum of 6 inches inside the open front;
- The rear of the barricade will face the area to be protected;
- Use of the MOFB is based on a MPM, of which the largest allowed is the 81 mm Mortar, HE, M374;
- Follow all precautions associated with ordnance and explosives;
- Observe safe work practices and procedures.

1.5.5.1.1 Personnel Protective Equipment (PPE)

Personnel while using the barricades will wear level "D" PPE. PPE will be in accordance with the Site Safety and Health Plan (SSHP). Personnel will use either steel-toe footwear or toe protectors when placing or moving barricades or involved with Material Handling Equipment (MHE).

1.5.5.1.2 Inspection

The barricades will be inspected for completeness and serviceability prior to and following each use. Missing or unserviceable components will be reported to the SUXOS or the UXOSO for repair or replacement. The barricades will be stored as a complete unit with all plates available to facilitate ease of inspection and accountability of components. Barricades will be placed on a wooden pallet or other suitable material. The barricades will be transported by the most appropriate method available.

1.5.6 ANOMALY INVESTIGATIONS

The anomalies marked by the UXO Sweep Teams will be investigated using manual excavation methods. Anomalies will be pursued to depth.

1.5.7 OE/UXO DISPOSAL

USA intends to utilize electrical disposal procedures for this Removal Action. However, due to the possibility of periods of high static electricity and availability of explosives in the Fort Bliss ASP it may be necessary to utilize non-electric procedures. All personnel directly or indirectly engaged in UXO operations are thoroughly trained and capable of recognizing hazardous explosive exposures.

Demolition operations will not begin in a work site until all non-essential personnel are outside of the EZ established for the ordnance being detonated. UXO that is unsafe to move (e.g. fuzed items) must be blown in place (BIP). USA will use engineering controls such as sandbags, in accordance with HNC-ED-CS-S-98-7: Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions, whenever it is necessary to blow in place items that are close to exposed personnel, public traffic routes, and structures that could be impacted by the explosion.

1.5.7.1 Disposal Procedures

All OE will be destroyed the day it is recovered. Disposal will take place in the grid in which the OE is located. Disposal will be in accordance with USAESCH HNC-ED-CS-S-98-7 (Use of Sandbags for Mitigation of Fragments and Blast Effects Due to Intentional Detonation of Munitions) with electric or non-electric utilizing detonating cord, composition C4, jet perforators, and proper sandbag techniques. Demolition safety and operations will be conducted in accordance with the standard practices and procedures outlined in TM 60A 1-1-31 and the appropriate specific 60 Series EOD Publications. UXO will only be destroyed after positive identification

1.5.7.2 Control and Accountability

The SUXOS will record usage data of explosives and the quantities of UXO destroyed in place. The SUXOS will be responsible for the proper use, issue, and maintenance of all explosive records.

1.5.7.3 Demolition Operations

Demolition operations, if required, will take place at the end of each workday for all UXO/OE unfuzed and fuzed items. If an event, such as inclement weather, prevents the destruction of any UXO, arrangements will be made to provide security for the site (i.e., SUXOS in conjunction with local law enforcement officials or Fort Bliss Military Police will secure the area, preventing unauthorized personnel from entering). The SUXOS will be responsible for determining the minimum safe conditions to perform demolition operations. UXO personnel will provide perimeter security for all demolition operations.

1.6 QUALITY ASSURANCE/QUALITY CONTROL

USA will perform a Quality Control (QC) survey using a handheld locator of the same technology used for the original survey covering a minimum of ten (10) percent of each grid after field operations have been completed in the grid. Excavations of any uninvestigated subsurface anomalies discovered during the QC survey will be thoroughly investigated and the results recorded. A QC check of selected investigated anomalies will be performed to determine that the excavation removed the anomaly and there are no remaining items of concern. The USACE OE Safety Specialist will perform a Quality Assurance Inspection of approximately 10% of grids upon completion of the RA and USA QC.

1.6.1.1 Failure Criteria

A failure will occur if, during the QC or the Government Quality Assurance (QA) of any grid, a piece of ferrous metal equivalent in size to a MK II hand grenade or larger is found. A failure will occur if any UXO/OE item is found. Failures will be documented, reported, and corrective actions taken, to include a re-sweep of the grid.

1.7 REMOVAL AND DISPOSAL OF SCRAP METAL

Within or adjacent to each operating grid, the UXO Team will establish temporary non-hazardous OE scrap collection points. During operations, OE items that are free of explosive contamination will be placed into these collection points. OE items that require venting to determine if they are explosives free will be included in demolition operations and vented using a Jet Perforator (shape charge) to explosively open the item. Upon completion of operations in that grid, the material in these temporary collection points will be collected by the team and transported to locked containers located at the field office site at the U.S. Border Patrol Museum. The Border Patrol Museum site is secured during non-work days and evenings with a locked gate and the site is normally included during local law enforcement, and Military Police patrols.

As the material is being placed into the locked containers, the SUXOS and UXO Quality Control Specialist (UXOQCS) will perform a second inspection of the material to ensure it is free of explosives and other hazardous materials. The SUXOS will prepare and sign as certifier a DD Form 1348-1A and the USACE OE Safety Specialist will sign as verifier with the following statement:

"This certifies that the AEDA residue, Range Residue, and/or Explosive Contaminated Property listed has been 100 percent properly inspected and to the best of our knowledge and belief are inert and/or free of explosives or related material."

At project completion, or when on-site scrap containers are full, USA will turn-in the scrap to a local scrap dealer for disposal. USA has coordinated with M&M Metals, El Paso, TX for demilitarization and disposal of OE and non-OE related scrap metal. M&M will provide USA with certification that the material will be smelted or crushed prior to release for sale. USA will track the material from the time of recovery through the disposal process and will include this documentation in its Final Report.

1.8 ALTERNATE TECHNIQUES

There are no alternate techniques planned for destruction of OE onsite. The onsite method selected to destroy OE is detonation.

1.9 OFF-SITE DESTRUCTION

Off-site destruction will not be used to destroy of OE recovered at Castner Range.

1.10 TECHNICAL SUPPORT

USA Environmental, Inc. will provide on-site contractor support for location, identification, and disposal of OE. USA will subcontract to a local professional surveyor to establish area boundaries. In the advent that OE is encountered that cannot be detonated on site, USA will coordinate with the USAESCH for EOD support.

There has been no evidence of chemical warfare materiel (CWM) being stored, tested, or exists within the area comprising this project. If onsite UXO personnel suspect that an excavated anomaly is a potential CWM item, the following procedure will be implemented:

- Work will immediately stop and all workers will leave the area to an upwind location.
- The onsite UXO personnel will contact the SUXOS for confirmation.
- The Senior UXO supervisor will notify the USACE onsite OE Safety Specialist, and the USA home office. The USACE OE Safety Specialist will notify Fort Bliss and Explosive Ordnance Disposal (EOD).
- The USA Project Manager will call the USAESCH Project Manager to inform him that a potential CWM item has been discovered.
- Onsite UXO personnel will secure the site and will post two UXO technicians to guard the site until direction is received from USAESCH or until military EOD or a Technical Escort Unit (TEU) arrives to take control of the site. USA and its subcontractors will stand ready to support the military or USAESCH as required.

1.11 LAND USE RESTRICTIONS

There are no current plans to release the property from DOD control and as such no restrictions. Castner Range is currently posted as no trespassing, Government property. If at a future point the property is disposed of, land restrictions will be addressed based on clearance efforts and items encountered during the Removal Action.

1.12 PUBLIC INVOLVEMENT

Public involvement is through a periodic Restoration Advisory Board (RAB) held to discuss Fort Bliss environmental clean up actions and initiatives. Castner Range has been the focus of many of these meetings.

1.13 MAPS

Maps depicting the Castner Range Removal Actions are as stated the following subparagraphs and are included in attachments 1 and 2.

1.13.1 REGIONAL MAP

Attachment 1 contains Figures 1-1 and Figure 1-2 showing the location of Castner range.

1.13.2 SITE MAP/QD MAPS

Attachment 2 includes drawings (Sheets 1-6) of the five areas including the MPM, exclusion zone, and MSD. As demolition material will be stored in the Fort Bliss active Ammunition Supply Point (ASP) the magazine locations are not within the Castner Range site and are not included in this ESS. The explosive storage for operations will be in Government approved explosive magazines and approved siting plans for the magazines are maintained by Fort Bliss. If a munition with a greater fragmentation distance then the MPM for the area is found, the Exclusion Zone (EZ) will be extended using the distances in Table C5.T1 or C5.T2, DOD 6055.9-STD and work will continue while an amendment to the ESS is being processed.

It will be necessary to transport explosives on public highways from the Fort Bliss ASP to Castner Range. USA explosive vehicle operators will have a current commercial driver license with a HAZMAT

endorsement. Explosives will be transported in closed vehicles whenever possible. The load shall be well braced and, except when in closed vehicles, covered with a fire-resistant tarpaulin or in an appropriate shipping container. All explosives in vehicles will be in IME-22 containers with each container complying with compatibility requirements. In accordance with DOT Regulations, explosives (less than 96-lbs.) carried in IME-22 containers are classified 1.4 and do not require placards or permits other than a BATF permit for transportation on public highways in Texas or New Mexico.

The RA surveys will begin in grids within the areas that do not require engineering controls to maintain the MSD EZ for personnel, public highways, or structures. Intrusive investigations will not be performed less than 200 feet, using the MOFB, from personnel, public highways, or structures. Based on the surveys and lack of any evidence of UXO or OE, an amendment to the ESS may be submitted to perform surface clearance surveys only within the 200 feet of inhabited buildings, highways and structures.

1.14 PLANNED OR ESTABLISHED DEMOLITION AREAS

The EZ for the intentional detonations will be the MSD, which is the calculated maximum fragmentation distance for the MPM of each area as furnished by USAESCH unless engineering controls are used.

1.15 FOOTPRINT AREAS

1.15.1 BLOW-IN PLACE

The EZ will be as described in paragraph 1.14.

1.15.2 COLLECTION POINTS

Collection points for UXO will not be used. All OE or items requiring venting will be vented or detonated in the area where found.

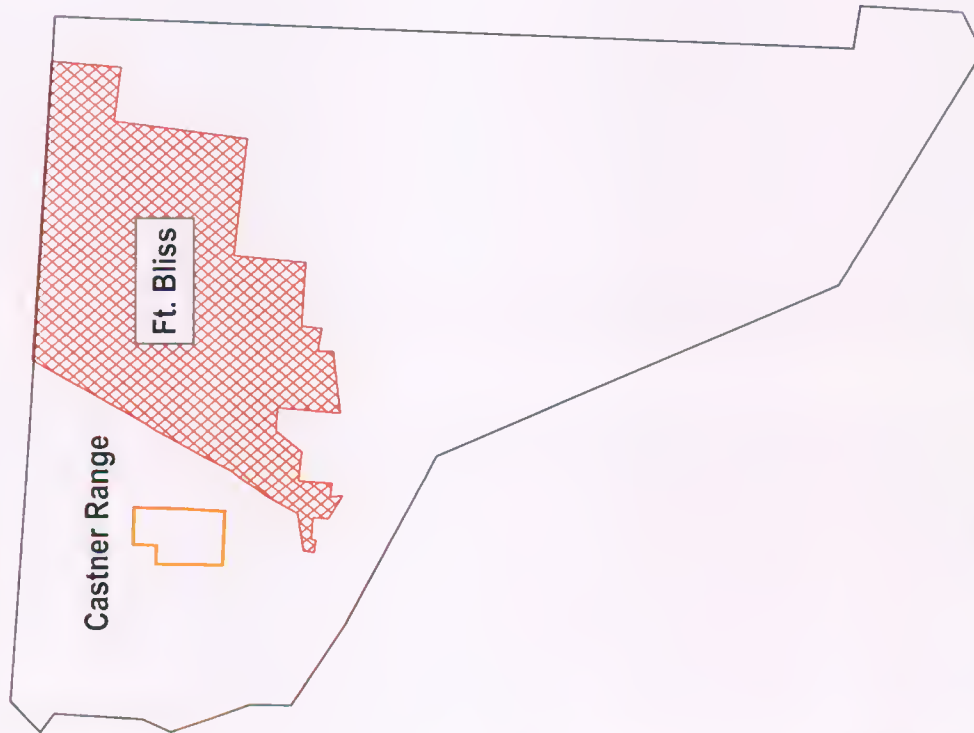
1.15.3 IN GRID CONSOLIDATED SHOTS

The EZ will be as described in paragraph 1.14. Demolition operations will begin in a work site when all nonessential personnel are out of the MSD for intentional detonations of the ordnance being detonated. UXO that is acceptable to move may be consolidated, in accordance with CEHNC Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and Explosives (OE) Sites, August 1998 (Terminology update March 2000), within an area (with USACE OE Safety Specialist concurrence) to reduce the number of shots and lessen environmental damage. To the greatest extent possible, all items will be BIP to reduce the risk inherent in handling and movement.



TEXAS

EL PASO COUNTY



6.5 3.25 0 6.5 Miles

125 62.5 0 125 Miles

Castner Range
Figure 1-1
Ft. Bliss
El Paso Texas

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Sheet 1 of 1

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And Support Center,
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Huntsville, Alabama

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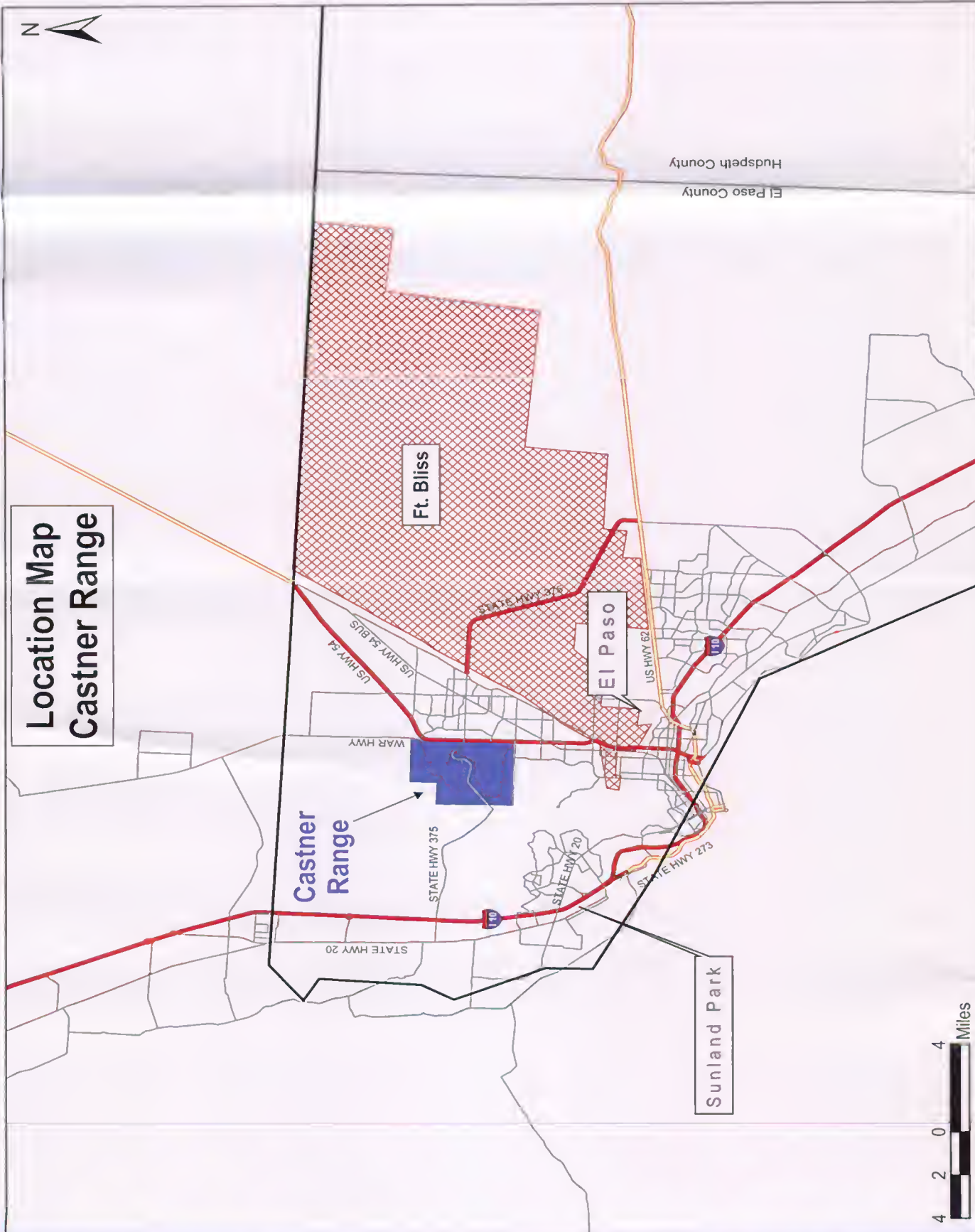
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HUNTSVILLE, ALABAMA

PREPARED BY:



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Tampa, FL

Location Map Castner Range



Castner Range
Figure 1-2
 Ft. Bliss
 El Paso Texas

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Sheet 1 of 1

US Army Engineering
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 Huntsville



Huntsville, Alabama

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Date 9/30/2002	Design File No.	Drawing Code	Plot Date 9/30/2002 Plot Scale 1" = 4 miles

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 Tampa, FL

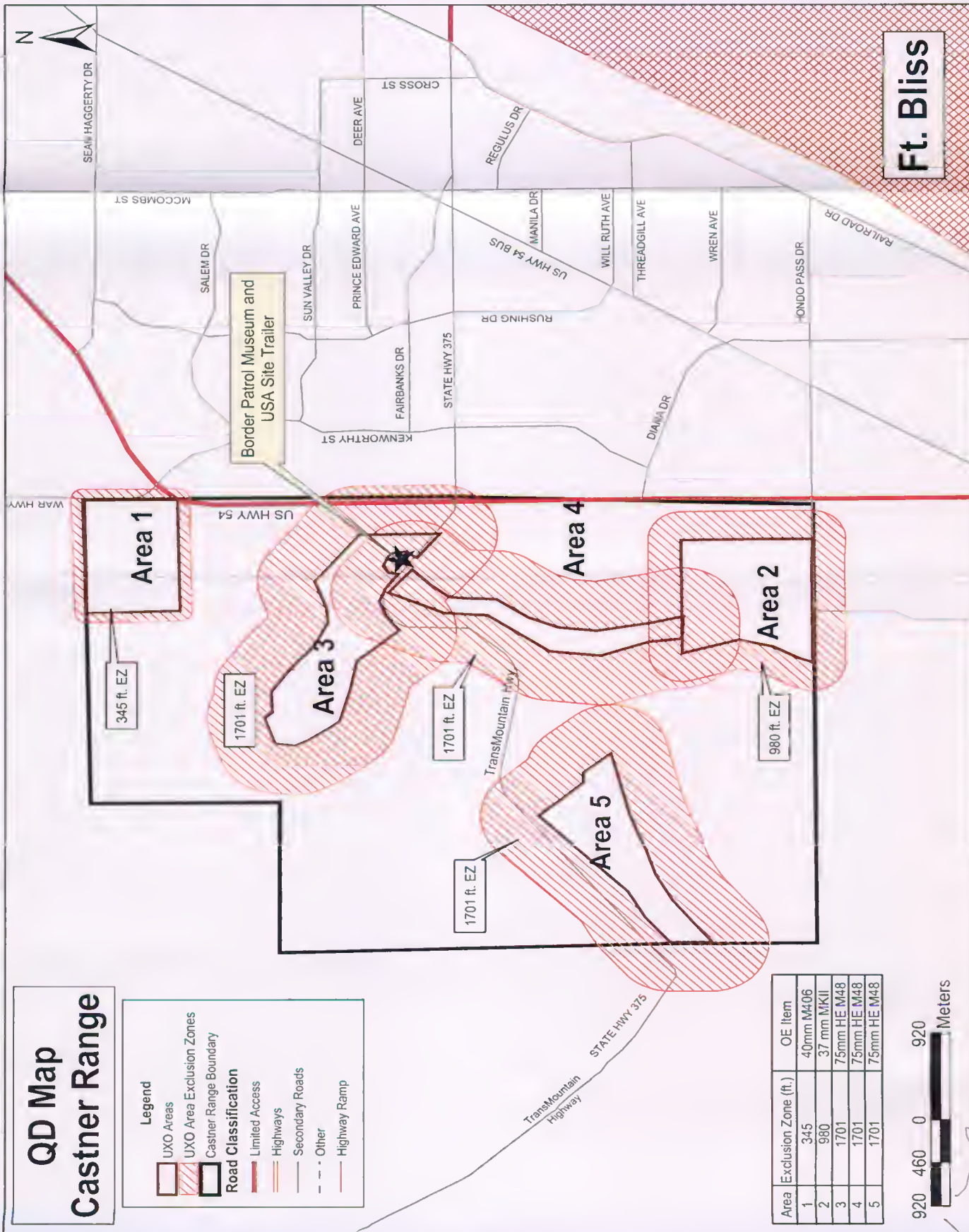
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QD Map Castner Range

Legend	
	UXO Areas
	UXO Area Exclusion Zones
	Castner Range Boundary
Road Classification	
	Limited Access
	Highways
	Secondary Roads
	Other
	Highway Ramp

Area	Exclusion Zone (ft.)	OE Item
1	345	40mm M406
2	980	37 mm MKII
3	1701	75mm HE M48
4	1701	75mm HE M48
5	1701	75mm HE M48



Ft. Bliss

Castner Range
Figure 1-2
Ft. Bliss
El Paso Texas

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Sheet 1 of 6

U.S. ARMY ENGINEERING
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HUNTSVILLE, ALABAMA

PREPARED BY:

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Reviewed By:

GS

GS

Design By:

JAL

Date

12/05/2002

Draw

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Design File No.

12/05/2002

Plot Date 12/05/2002

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Submitted By:

GS

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Castner Range
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El Paso Texas

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Sheet 2 of 6

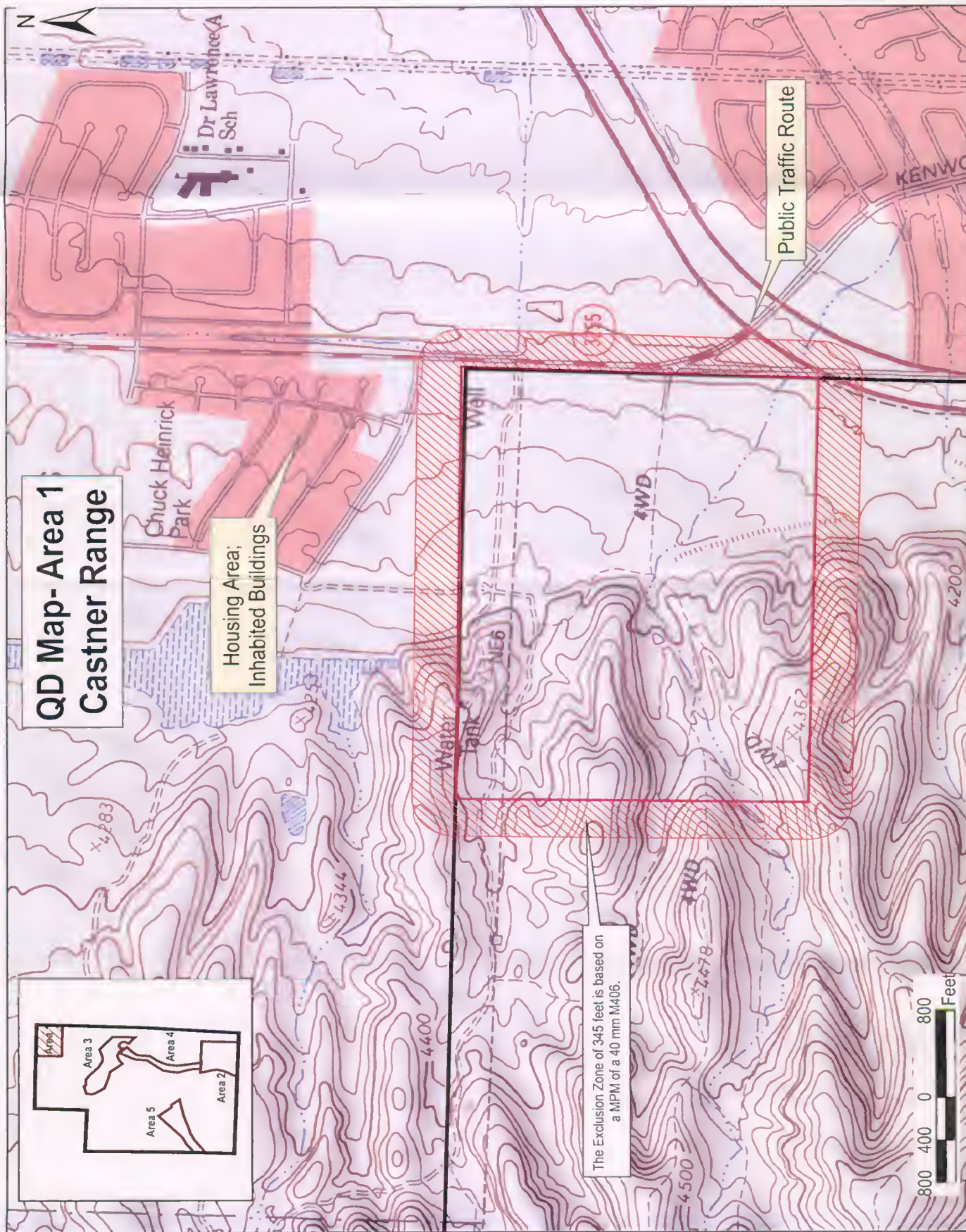
QD Map- Area 1 Castner Range

Housing Area;
Inhabited Buildings

Public Traffic Route

The Exclusion Zone of 345 feet is based on
a MPM of a 40 mm M406.

800 400 0 800
Feet





**QD Map- Area 3
Castner Range**

Housing Area;
Inhabited Buildings

Border Patrol Museum and
USA Site Trailer;
Inhabited Buildings

Public Traffic Route

Public Traffic Route

The Exclusion Zone of 1701 feet is based on
a MPM of a 75 mm HE M48

1,500 750 0 1,500 Feet

Public Traffic Route

Public Traffic Route

Border Patrol Museum and USA Site Trailer; Inhabited Buildings

Housing Area; Inhabited Buildings

Castner Range
Ft. Bliss
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Sheet 4 of 6

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PREPARED BY:

USA Environmental, Inc.

Tampa, FL

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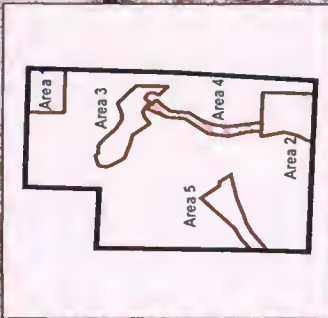
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QD Map- Area 4 Castner Range



Border Patrol Museum and
USA Site Trailer;
Inhabited Buildings

Housing Area;
Inhabited Buildings

Public Traffic Route

The Exclusion Zone of 1701 feet is based on
a MPM of a 75 mm HE M48.

Public Traffic Route



US Army Engineering
And Support Center,
Huntsville
Huntsville, Alabama

Designed By	JAL	Date	11/27/2002
Drawn By	GS	Design File No	2
Reviewed By	JAL	Drawings Code	
Submitted By		Part: - (predecessor)	
		Plot Date 11/27/02	Scale: 1" = 1500'

U.S. ARMY ENGINEERING AND
SUPPORT CENTER
HUNTSVILLE, ALABAMA
PREPARED BY:
USA Environmental, Inc.
Tampa, FL

Castner Range
Ft. Bliss
El Paso Texas

Contract Number:
DACA87-500-D-0036
Task Order:
0014
Sheet 5 of 6

US Army Engineering
And Support Center,
Huntsville



Huntsville, Alabama

Designed By JAL	Design File No. GS	Submitted By JAL	Rev 2
Checked By JAL	Design Date 11/27/2002	Reviewed By GS	
Drawn By JAL	Design Date 11/27/2002	Submitted By JAL	
Scale: 1" = 100'	Proj. Code: 00-00-00	Proj. Date: 11/27/2002	

U.S. ARMY ENGINEERING AND
SUPPORT CENTER
HUNTSVILLE, ALABAMA

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El Paso Texas

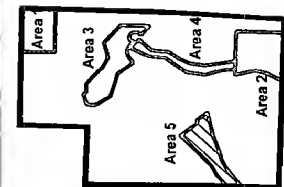
Contract Number:
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0014

Sheet 6 of 6

QD Map- Area 5 Castner Range

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